CHAPTER II

LITERATURE REVIEW

This chapter discusses the underlying concepts and theories of 21st-century learning, literacy, digital literacy, the integration of digital tools in education, and technology integration challenges in English language teaching. By examining various perspectives and findings from previous research drawn from scholarly journal articles and books, this discussion aims to build a solid foundation for understanding how these elements intertwine in the context of English language teaching. This theoretical exploration is particularly relevant to this study as it highlights the evolving role of digital literacy in shaping teaching practices and provides a framework for analyzing its application for novice English language teachers.

2.1 An Outline of The Concept Of 21st Century Learning And Skills

The ideas of 21st-century education are intimately tied to the advancement of globalization, industry, and technology. The world has become more digitalized and globalized due to the rapid advancement of technology in recent times (Brown et al., 2008). In the last decades of the 20th century, the widespread use of information and communication technologies, such as computers, software, the internet, networking devices, and systems, dramatically outpaced the growth of industries and economies in Western nations like the USA and Europe (Trilling & Fadel, 2009). Many aspects of lives, including education, are touched by the recent changes in business and economics that enable higher productivity through sophisticated information technology and networking systems. The schools heavily influence the use of technology in the classroom. Similarly, government officials and educational institutions updated their subject-based curricula because they felt that the 21st century needed unique skills for social participation, employment, and good citizenship (Bourn, 2018).

It is thought that education needs to change to reflect the present-day conditions. In a study published in 2018, Dahalan and Ahmad investigated how

teachers perceived frameworks for 21st-century skills, how to incorporate 21st-century abilities into their lessons, and how to connect learning materials to 21st-century skills. This is because a growing number of those working in the field of education now recognize the necessity and significance of introducing pupils to 21st-century learning. The term “21st-century learning” is commonly used to indicate the skills and abilities required to achieve success in today's complex and interconnected global environment. These abilities include digital literacy, cultural competency, emotional intelligence, inventiveness, entrepreneurship, critical thinking, and problem-solving (Metiri, 2013; Partnership for 21st Century Learning, 2013). Similarly, several 21st-century frameworks created by organizations focused on education also show up in the literature. Two significant organizations have taken on the goal of defining 21st-century learning. Metiri is one of these organizations that supports educators, school administrators, and students in developing 21st-century abilities. Metiri (2003) lists digital literacy, creative thinking, interactive communication, and high productivity in their list of abilities, which they have named the "enGauge 21st century."

Referring to frameworks of 21st-century learning such as Metiri (2013) and Partnership for 21st Century Learning, it can be seen that digital literacy has become one of the critical competencies. It is logical since information and technology are massively adopted, and everything has become digitalized. As a result, digital literacy is essential to surviving in an information-rich and technology-driven society (Care & Kim, 2018; Kozma, 2011). Likewise, today’s teachers must keep up with technology because they are the role models for their students. More than that, teachers are responsible for facilitating and guiding students to learn in this digital age. Digital literacy does not mean only a matter of reading and writing or just being able to operate technological-based media. However, it goes beyond that, such as relating to other people's ideas, developing new ideas, and being associated with digital media (Jones & Hafner, 2012).

Schools are adopting technology massively now. Today’s classroom teaching practices utilize digital media like e-books, email, audio-video, social media, and learning applications. Learning with technology use does not mean that

everything runs well. Sometimes, students find problems like technical issues, computer literacy, adaptability to learning virtually, evaluating materials from online resources, and using relevant media. In this case, teachers have to employ their digital literacy skills to help their students' solving problems in a digital learning environment (Sadaf & Johnson, 2017). Actually, the use of authentic as well as created printed materials like textbooks, document, scripts, newspaper and magazines are still acceptable to be used in today's language teaching as long as they contain interesting and relevant materials, and the teachers may adopt and adapt them.

Embracing 21st-century learning means that all parties have to prepare for the transformation, including teachers, students, policymakers, parents, and professional development providers. Schools' infrastructure, willing and ready teachers, administrative support and effective professional development practices become the ultimate aspects of schools' readiness for the 21st century (Donovan & Green, 2013). Being digitally literate is considered necessary in order to survive in this 21st era (Eshet-Alkalai & Amichai-Hamburger, 2004). As part of a global society, Indonesians must prepare themselves for digital literacy, especially concerning education. The COVID-19 pandemic accelerated the shift to online learning in Indonesia, emphasizing the urgent need for strong digital literacy skills. without these skills, teachers and students will struggle to engage with the curriculum, hindering educational outcomes (Putra & Rullyanti, 2023). Integrating digital literacy into the curriculum also helps students improve their critical thinking, problem-solving skills, and adaptability to changing technology (Yates et al., 2015). Nevertheless, integrating digital literacy into education does not always run smoothly (Kuek & Hakkennes, 2020). Sometimes, problems like limited technical support or resources, misuse of technology, distractions, lack of training, and limited time for planning lessons may hinder it (Sadaf & Gezer, 2020).

As the transformation toward 21st-century learning occurs, all parties, teachers, students, schools, and policymakers must develop and apply various forms of literacy, including digital literacy. The literacy concept will be explained in the next section.

2.2 Literacies

Literacy traditionally refers to the ability to read and write, primarily focused on reading and writing pedagogies (Larson & Marsh, 2005). However, this view is limited as the sociocultural context challenges this narrow definition, suggesting that literacy extends beyond just reading and writing to include other skills, like digital literacy, which is essential in the modern, technology-driven world (Gee, 2008).

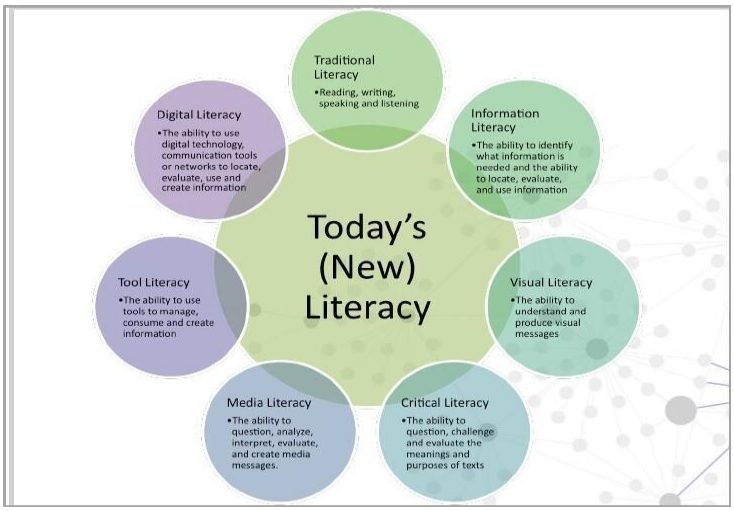
New Literacy Studies (NLS) is a new concept of literacy that has been around since the 1980s and was introduced by scholars from anthropology, sociology, linguistics, and literature. It acknowledges the influence of sociocultural theory and considers social practices and contexts based on sociocultural perspectives or theory (Lewis & Fabos, 2005). This movement toward new literacy concepts is also called "the social turn" (Roswell & Pahl, 2015, p. 6). According to NLS, literacy encompasses more than just the capacity to read and write; it also reflects how individuals use information about their social surroundings. For example, reading a novel differs from writing or reading journal papers. Additionally, contacting our lecturers should be done differently than texting our friends. Accordingly, literacy studies focus on revealing the diversity of social behaviors in every setting rather than just assessing reading and writing proficiency (Street, 2009). Factors including technology, economy, culture, and health determine the focus of literacy. Expanding on this viewpoint, “literacy” is considered multiple (Gee, 2015, p. 36).

Many forms of literacy are produced by multiplicity, including financial, health, academic, technological, critical, and cultural literacy. Every literacy style has a specific focus and contextual bounds. For example, health literacy is related to sharing knowledge about medical conditions, medicine, emergency response, and illness detection. People who are health literate can read, comprehend, evaluate, and apply medical knowledge. They may even be able to make informed decisions about their health. This supports Gee's (2015, p. 36) claim that individuals “read and write specific sorts of texts in specific ways.” This also holds for digital literacy. As a result of the widespread adoption of digital technology in teaching and

learning, students must contextualize how they respond to digitally mediated communication. Students who work with digital tools and spaces must be more selective, analytical, and evaluative in how they perceive, use, and share information.

Various terms are used to describe new literacy that incorporates digital literacy, including 21st-century literacies, internet literacies, new media literacies, information literacies, computer literacies, and, in this thesis, digital literacy (Belshaw, 2011). According to Daniel Churchill (2009), the basic set of fundamental skills needed to generate and convey meaning, grow as a person, and function in a dynamic society is "today's new literacy."

Figure 2. 1 *Today's new literacies (Churchill, 2009)*



As demonstrated in Figure 1, literacy has transformed into various literacies, or multiliteracies, to teach people the skills required in a global society. Before transformed many ways literacy is defined as the ability to read and write (Larson & Marsh, 2005). Seven different types of literacy make up today's new literacy: media literacy, tool literacy, critical literacy, visual literacy, traditional literacy, information literacy and digital literacy. Traditional literacy includes reading, writing, speaking, and listening. Information literacy consists of the ability to identify what information is needed and the ability to locate, evaluate, and use

information. Visual literacy is the ability to understand and produce visual messages; it encompasses perspective, ratio, light, color, and other types of visual communication. Critical literacy refers to the ability to question, challenge, and evaluate the meanings and purpose of texts. Media literacy has typically been associated with critical analysis of news, advertising, and mass media entertainment (Hobbs, 2010). Tools literacy uses digital technology, communication tools, or networks to locate, evaluate, use, and create information (Burn & Durran, 2007, cited in Escoda, 2013). All literacies have essential roles in increasing human quality. However, this study focuses only on digital literacy as the main topic of the study.

Moreover, the concept of digital literacy is blurred for some people as it frequently overlaps with other related literacies like computer/IT/ICT literacy, technology literacy, and e-literacy etc. Computer/IT/ICT literacy refers to the ability to use computers. It consists of specific skills in computer science and programming, the ability to operate a computer, and the reflection of being more critical and evaluative in using computer/IT. Technology literacy refers to the ability to use technology or technological tools in general.

The definitions of multiliteracies or related literacies above help navigate digital literacy's actual meaning. The key concepts of digital literacy refer to how people manage digital information safely, wisely, and productively (Dudeney et al., 2013; Dudeney & Hockley, 2016). In this sense, digital literacy integrates various concepts of related literacies to be one-set soft skills (Bawden, 2008). Similarly, "we can consider different types of literacy to be part of the same family" (Hobbs, 2010, p.17). Furthermore, this actually happens in digital literacy. Thus, the nature of digital literacy reflects the ability to identify, evaluate, use, and create information effectively through digital tools and various media. The critical concept of digital literacy will be discussed later in the following section.

2.3 Defining Digital Literacy

Numerous authors have given different definitions of digital literacy. Digital literacy was first coined by Paul Gilster (1997, p.1) as "the ability to understand and use information in multiple formats from a wide range of sources when it is

presented via computer." He argued that digital literacy is the ability to use technology and information from digital devices effectively and efficiently in various contexts, such as academic, career, and daily life. In the same way, Son et al. (2011, p. 27) define digital literacy as "the ability to use a computer at an adequate level for creation, communication, and collaboration in a literate society." Dudeney et al. (2014), digital literacy is the ability to utilize available technology and comprehend the social practices that surround it. In this context, digital literacy combines various related literacies into one set of skills (Bawden, 2008). Likewise, "we can consider different types of literacy to be part of the same family" (Hobbs, 2010, p.17). Digital literacy includes various abilities, all essential for success in a world that is becoming increasingly digital (Belshaw, 2012). Therefore, the nature of digital literacy is basically about competence in using technology to access, evaluate, create, and communicate information effectively and responsibly through digital tools and various modes/media. It is not only involving technical skills but also an understanding of the social implications of technology use.

Consequently, rather than emphasizing the technical skills of using digital tools like computer work, document applications like Microsoft Office and PDF viewers, internet browsing, and website navigation, the concept of digital literacy places more emphasis on soft skills like critical thinking, evaluation, and reflection for managing digital information contextually. Moreover, critical thinking is more important than the technical competencies on which digital literacy is based, according to Gilster (1997). This implies that "digital literacy is more than skills or competencies" (Martin, 2008, p. 164). As stated by Hobbs (2010), p.17. that the term "digital and media literacy" is used to encompass the full range of cognitive, emotional, and social competencies that includes the use of texts, tools, and technologies; the skills of critical thinking and analysis; the practice of message composition and creativity; the ability to engage in reflection and ethical thinking; as well as active participation through teamwork and collaboration. Therefore, related to the teaching process, digital literacy offers teachers the ability to find, evaluate, utilize, share, and create content using information technologies and the internet (Beckingham & Belshaw, 2011).

Dudeney and Hockly (2016) also emphasized that digital literacy refers to productive, wise, and secure digital information management. This aligns with Hobbs's (2010) competencies in digital literacy, which focus on the ability to analyze and evaluate information from the internet. Given these definitions, In this study, the definition of digital literacy will be based on Hobbs (2010), who conceptualizes digital literacy is not only emphasizing the technical skills of operating and using various information and communication technology devices (hardware and software platforms) to navigate digital environments but also the characteristics of digital literacy refer to the process of accessing or finding information using media and technology, analyze and evaluate credibility and critical thinking in using internet, create content using creativity and confidence, reflect social responsibility and ethical in using internet. The last is to work individually or collaboratively to share knowledge and solve problems.

Previously, "e-literacy," a term invented by Martin (2003, p. 18), has been used interchangeably to refer to digital literacy. In specific literary works, digital literacy is often referred to by the term "e-literacy." However, due to the possibility of "the potential confusion with illiteracies in spoken discourse," the word "e-literacy" is not generally used (Bawden, 2008, p. 25). Even though e-literacy is mentioned in this study, it is primarily concerned with digital literacy.

2.4 Framework of Digital Literacy

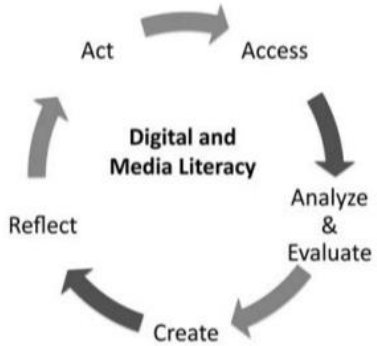
Various models and frameworks have been created up to this point for assessing and diagnosing digital competence. Many frameworks have been presented by (Eshet, 2004; Krumvsik, 2014; Hobbs, 2010; Koehler & Mishra, 2009 and Martin, 2008; DigComp, 2022) to explain the various aspects, levels, components, and competencies of digital literacy. However, this study selected two frameworks: the five Essential Competencies of Digital/Media Literacy (Hobbs, 2010) and The Digital Competence Framework for Citizens (DigComp) by (Vuorikari et al., 2022), which provide a common understanding of what digital competence is.

Schmitz et al. (2024) mentioned that Hobbs' digital and media literacy framework emphasizes critical dimensions such as making responsible choices,

accessing information, analyzing messages, creating content, and engaging in social action collaboratively (Hobbs, 2010, 2019). This aligns well with the DigComp 2.2 framework, which outlines essential digital competencies, including information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving (Vuorikari et al., 2022). Both frameworks stress the importance of critical engagement with media and technology. For example, Hobbs's focus on analyzing messages and creating content mirrors DigComp's emphasis on digital content creation and effective communication. Additionally, the ethical considerations in Hobbs' framework relate to the safety and responsible use highlighted in DigComp 2.2. The relevance of these theories supports researchers in developing assessment instruments for digital literacy skills. By integrating these perspectives, educators can better prepare individuals to navigate the digital landscape as informed and active participants.

Hobbs contends that individuals must possess skills to navigate the vast flow of information in digital media in today's world. Her discussion outlines five digital media literacy competencies: access, analysis and evaluation, creation, reflection, and action.

Figure 2. 2 *Essential competencies of Digital and Media Literacy (Hobbs, 2010, p.18)*



The five competencies illustrate the cyclical nature of information management. It illustrates the start of digital literacy practices through access to information, the intermediate stage of managing information involving analysis,

evaluation, creation, and reflection, and the concluding phase of taking action, either independently or collaboratively, to share the information.

Table 2. 1 *A detailed description of digital and media literacy essential competencies (Hobbs, 2010, p. 19)*

Competencies	Descriptions
Access	Finding and using media and technology tools skillfully and sharing appropriate and relevant information with others
Analyze and evaluate	Comprehending messages and using critical thinking to analyze message quality, veracity, credibility, and point of view while considering potential effects or consequences of messages
Create	Composing or generating content using creativity and confidence in self-expression, with awareness of purpose, audience, and composition techniques
Reflect	Applying social responsibility and ethical principles to one's own identity and lived experience, communication behavior and conduct
Act	Working individually and collaboratively to share knowledge and solve problems in the family, the workplace, and the community, and participating as a community member at local, regional, national, and international levels.

The first framework can be used to measure a person's digital practice. The researcher used a framework from Hobbs (2010) to evaluate how teachers can access, analyze, reflect on, and create digital content. Although this framework is not especially established for digital practices, the researcher found it relevant in characterizing how teachers employ their digital literacy competence in teaching and learning activities.

Next, The Joint Research Centre introduced the initial European digital competence framework in 2013 in partnership with key stakeholders, including policymakers, educators, and researchers. Since then, the framework has undergone multiple updates and expansions to keep pace with the rapidly evolving digital

landscape (Carretero Gomez et al., 2017; Vuorikari et al., 2016). In 2021, the European Commission formed several working groups to revise the framework further. On March 22, 2022, the Joint Research Centre of the European Commission released an updated version of the Digital Competence Framework. The DigComp Framework is likely one of the most widely adopted frameworks for digital competence. It serves as a tool for member states and organizations within these states to shape digital competency policies and assess the digital skills of their citizens, as outlined in the document.

21 competencies are presented in the publication DigComp 2.2, along with an updated list of the five competency areas: (1) information and data literacy, (2) communication and collaboration, (3) digital content creation, (4) safety, and (5) problem-solving. Digcomp 2.2 added eight proficiency levels and new examples of use. It focuses on examples of the knowledge, skills and attitudes applicable to each component. The DigComp 2.2 conceptual reference model is presented below.

Figure 2. 3 *Figure published by European Union Digital Competence Framework (Digcomp)*

The five categories of digital domains and twenty-one subdivided competencies outlined in the DigComp conceptual reference model offer an adequate common comprehension of the digital competencies that modern society requires (Kluzer & Rissola, 2015). Europe has widely accepted DigComp as the main framework for digital skills. In Flanders, for instance, Digisprong, the government's knowledge center for digital education, used DigComp 2.1 to create teacher guides and a free online learning platform to help teachers assess their own digital skills. For students, the framework helped shape educational goals related to

digital skills. Other countries also use DigComp in education. In the Netherlands, it serves as the basis for a tool to measure digital literacy in higher education, while in France, the education ministry developed a digital skills framework for students from primary school through university, inspired by DigComp. Researchers also use DigComp to build digital competence assessments for citizens and to study educational practices. For this reason, the researcher used this framework to assess EFL teachers' digital literacy.

Following the two frameworks above, this study set research instruments to navigate the implementation of digital literacy practice done by the teachers. The five essential competencies of digital/media literacy (Hobbs' framework) were employed as the basis for designing observation checklists and interview guides to describe how English language teachers' access, analyze, evaluate, create, reflect, and act on digital content. Furthermore, the researcher adopted the observation sheet from Nguyen (2014). He developed an observation sheet for assessing Vietnamese English pre-service teachers' digital literacy. On the other hand, the researcher developed the questionnaire using the Vuorikari (2022) framework to assess English teachers' digital literacy levels.

Furthermore, to assess teachers' digital literacy level, the researcher adopted the level of digital literacy from Bayrakci (2022). The explanation of each competence will be explained below;

Table 2. 2 *The Competencies of Digital Literacy Level (Bayrakci, 2022)*

Digital Literacy Scale Score Ranges	Level	Competence
1.62-3.07	Low/Poor	They can perform basic and routine digital tasks at a basic level. This is the entry-level stage, and they often need guidance from others.
3.08-3.62	Below Average/Weak	They can complete simple routine tasks and understand problems clearly independently.

3.63-4.17	Average	They can solve non-routine, but uncomplicated problems independently. They are at an intermediate level in adapting to the digital age and continue to learn.
4.18-4.72	Above Average/Good	They are digitally literate, able to solve complex situations independently and help others with routine tasks. They can use and understand digital technologies in their lives.
4.73-5.00	High/Perfect	They are expertise to help others solve problems in their professional lives and suggest or create new ideas and processes related to work.

Bayrakci's (2022) digital literacy level revealed Hobbs's five essential points, which associate each competency with distinct levels of digital literacy ability. At the most basic to mid-level, the individual can perform simple and routine digital operations, solve uncomplicated routine tasks, and have a clear understanding of problems independently. This aligns with Hobbs's competencies of accessing digital information appropriately. The individual has improved access to digital resources and tools, and navigating routine tasks more independently is the first step to being digitally literate. It could be exhibiting skills in operating digital tools like using computers, Microsoft Office, browser applications, e-learning platforms, and online assessment tools (Hague & Payton, 2010). A study by Alakrash & Razak (2021) indicates that teachers have high basic digital literacy skills. For example, the teacher uses communication and presentation tools or google as a search engine.

The individual can resolve non-routine but not complicated problems on his or her own. The individual is intermediate, keeping up with the digital age and actively continuing. It is connected to Hobbs' competencies of analyzing and

evaluating that individuals can independently comprehend the message using critical thinking to analyze complex digital content. It is supported by a study conducted by Atmojo et al. (2022). The English teacher can resolve non-routine but not complicated problems, such as viruses, which are one of the problems with technology. Viruses that spread on computers can interfere with the performance of information technology. It is supported by a study conducted by Rasyid et al. (2023); the English teacher at the intermediate level can have digital and technological awareness, use and utilization of technology and information, technological literacy (communication, evaluation, critical thinking, and collaboration), and also technological creativity.

On the above average or good category means that she or he is a digital literate who can solve complex situations independently and guide others in routine tasks. She or He can apply and interpret digital technologies in his/her own life. The teacher's ability to choose solutions when faced with problems in the technological environment (Calvani, Fini, & Ranieri, 2009). This aligns with findings by Hartati et al. (2024) that prospective teachers in “fairly good” categories excelled in information literacy and problem-solving. At this level, the teacher demonstrates critical thinking skills to independently address complex situations. For example, they can troubleshoot technical issues on online learning platforms, such as resolving video conferencing errors. If a student's connection is interrupted, the teacher promptly offers an alternative solution, like guiding the student to access a recorded lesson on a different platform.

Furthermore, at this level She or He can apply and interpret digital technologies in his/her own life. Study by Chama & A (2023) The study revealed that participants possessed moderate to high digital literacy skills. They felt confident in using digital tools for communication, browsing the internet, and online learning. However, they could benefit from more training in managing online information and developing web content. Moreover, Rahim et al. (2023) reported that participants demonstrated a good level of competence in information literacy, communication, collaboration, content creation, online safety, and problem-solving. Nevertheless, there's potential for improvement in digital content creation.

At the advanced level, the individual is digitally savvy, able to solve complicated problems independently and guide others through regular procedures. They can efficiently apply and interpret digital technologies in their everyday lives. Similarly, essential abilities in Hobbs's digital and media literacy of create, reflect, and act, which represent the ability to create and apply sophisticated and impactful digital content, are well-developed, often guiding others in this process. Advanced users can tackle intricate challenges that require critical thinking and creativity. For example, they might develop innovative solutions for integrating new technologies into the curriculum or troubleshoot technical issues during lessons. Many digital tools can be used, and teachers can choose the tools suitable for the learning goal (Soifah et al, 2021).

In terms of technical issues, the study by Liza (2020). The teacher got a higher score on the ability to solve technical problems of digital technology devices, which was the highest among those ten items. The English teacher their showed their high level of digital literacy by exceeding these three indicators. They are stated to have achieved the criteria for the highest digital literacy level on the highest indicator, namely creating and developing creative and imaginative digital media and understanding the basics of security in the digital realm. With these results, teachers at this level inevitably understand how to make the best and maximum use of digital technology for learning English (Rasyid & Nuriyah 2023).

Lastly, at a high level of expertise, the individual can guide others in solving problems encountered in professional life and proposing or producing new ideas and processes related to digital work. This is equal to the competencies act in Hobbs' digital and media literacy, demonstrating that the individual can work individually or collaboratively, guide others in ethical digital behavior, and contribute to developing best practices in digital environments.

2.5 Digital Media

Digital media, often known as multimedia, refers to electrical devices that store and transfer information in digital form. As a result, digital media tools serve as carriers and mediators for various digitally encoded information, including texts, photos, sounds, videos, animations, and combinations of these elements (Mantiri,

2014). Mobile web-based media, such as smartphones and tablets, provide access to this information regardless of time or location.

For educational contexts, all these features are very promising for collecting and providing content adjusted to learners' goals and needs so they can use it independently, for example, based on their preferences, prior knowledge, or learning pace (Degner et al., 2022). Moser (2017) adds that mobile digital media, in the sense of "ubiquitous learning," presents exciting potential for the flexible and self-directed design of learning processes. Digital media can provide users with an interesting, dynamic, and useful experience, integrating free-time entertainment and learning (Schwan et al., 2014).

According to Petko (2020), digital media can be utilized for information and presentation, understandably presenting learning content and providing clear examples, explaining connections, and creating interconnections with other content. Digital media can also deliver information in many formats and modes, such as text, image, audio, video, or a combination of the above. As tools and work aids, media can help learners expand their productive and creative possibilities through word processing and presentation programs or mind map software. It can also be used to design learning tasks based on various educational media options and, thus, reality. Media can also be used to guide and communicate with learners. Here are the examples of digital media that teachers can use.

2.5.1. Interactive Ebooks

E-books have also been employed in Indonesian education. The Ministry of Education and Culture has released an electronic book called the Electronic School Book (BSE). BSE Procurement intends to boost students' enthusiasm and interest in reading while making obtaining textbooks easier (Asrowi et al., 2019). As technology advances, e-books evolve from one-way texts and images to interactive media, including audio, video, animation, and simulation.

According to Kouis and Konstantinou (2014), electronic books, beginning with a simple version in PDF format and incorporating audio, video, animation, and simulation, have begun to be used in traditional

classroom instruction, distance education, online learning, and learning. E-books can assist teachers in enhancing their classroom teaching approaches (Embong et al., 2012). Electronic media used for learning can be helpful to teaching tools (Areerachakul, 2015). For example, interactive e-books on the web can be used.

Table 2. 3 *Interactive E-books Tools*

Online tools	Descriptions (usage/activity)
Epic!	A digital library for kids with a large collection of interactive eBooks, books to read, and quizzes.
Book creator	It allows the creation of interactive eBooks with multimedia elements like images, videos, and audio. Teachers and students can create engaging eBooks for various subjects, incorporating interactive quizzes and annotations.
Kotobee Author	supports interactive elements like quizzes, videos, and interactive images.
GitBook	A platform for creating documentation and interactive books supports embedding code and videos.

2.5.2 Learning Management Systems

A learning management system (LMS) is a powerful integrated system that supports various activities carried out by teachers and students during the e-learning experience. An LMS allows teachers to generate web-based course notes and quizzes, connect with students, and track and grade their progress. Students use it to learn, communicate, and cooperate. LMSs use the internet as an extension of learning, allowing users to access content anytime and anywhere. As more learning activities occur online, educators must collect relevant and accurate data to track their students' development (Aldowah et al., 2019).

Learning Management Systems (LMS) offer teachers and students an online classroom that promotes learning processes. Learning

Management Systems (LMS) help professors and students learn more effectively in online classroom settings. A standard LMS fosters an inclusive learning environment for academic development by facilitating online collaborative groupings, professional training, discussions, and communication with other LMS users (Dias & Diniz, 2014; Jung & Huh, 2019; Oakes, 2002; Bradley, 2021). According to Nasser, Cherif, and Romanowski (2011), a learning management system offers online learners consistent performance information. For example, consider this platform. The types of LSM that can be employed are:

Table 2. 4 *Online Tools for Learning Management Systems*

Online tools	Descriptions (usage/activity)
Moodle	The system enables students to interact and communicate freely anytime with lecturers, submit assignments and take quizzes. Participants learn through interaction, promoting student-centered, problem-solving, and social constructivist approaches to learning (Westermann, 2014; Saghafi et al., 2014; Gonzàles-Gómez et al., 2016).
Google Classroom	Google Classroom Google Classroom is a free application designed to assist students and teachers in connecting, working together, organizing, and creating assignments. It is a collaborative set of tools that include web tools like Google Docs, Google Drive, Gmail, etc.
Edmodo	Edmodo has complete features to assist in the online learning process. It is equipped with home, quizzes, classroom settings, a library, discover, and message.
Quipper	website that offers lessons, quizzes, and tutorial videos for various subjects and levels.
Geschool	is an LMS that has various functions, such as a diary, publication media for important information, general knowledge, and educational media.
Canvas	social learning platform, supporting communication, content sharing, quizzes and assignments.

Blackboard Learn	blackboard Learn is an online teaching, learning, community-building, and knowledge-sharing application.
Zoom, Skype, Yahoo Messenger & Google Meet	Collaborative tools for learning, with real-time video and audio.
Google Docs	Collaborative writing and chatting
Wikispaces, Zoho writer, quip and WordPress	Collaborative writing
Social media	For students' learning, sharing, posting, communication and participation encourage students' involvement and enable in-depth learning. Tool for teaching in online learning.

Digital tools and educational apps can be categorized into several types based on their functions, such as communication and collaboration tools (e.g., Zoom, Google Meet), learning management systems (e.g., Google Classroom, Moodle), content creation tools (e.g., Canva, PowerPoint), assessment tools (e.g., Kahoot!, Quizizz), and subject-specific apps (e.g., Duolingo, Grammarly). These tools are connected through their complementary roles in creating an interactive, engaging, and organized learning environment. For example, tools like Zoom for live sessions, Google Classroom for course management, and Kahoot! for assessments work together to support the teaching and learning experience. In the context of this study, these tools relate directly to how EFL teachers integrate digital literacy into their teaching practices, reflecting their ability to use technology to enhance student engagement, facilitate communication, and improve learning outcomes. Understanding how these tools are used

and connected provides insights into the level of digital literacy and technology integration among EFL teachers.

2.5.3 Educational Apps

In most areas of life today, technology has advanced swiftly. People try to find information utilizing technology, such as the Internet. Progress in English is said to coincide with technological advancement. Many schools now use technology as a learning tool in their curriculum. The application of the English curriculum requires technology as a medium (Hafifah, 2021). It is a crucial component of making transferring knowledge more pleasurable and engaging. g. The utilization of the internet or technology is commonly referred to as CALL (Computer-Assisted Language Learning). There are numerous applications used for learning English. Here are some educational ideas that popular taxis can be utilized for:

Table 2. 5 *Educational tools*

Online tools	Descriptions (usage/activity)
Duolingo	One of the apps that learners can use can complete many kinds of exercises, including writing, multiple-choice, and speaking through the microphone.
Memrise	Memrise is a crowdsourcing space repetition vocabulary learning program. It allows users to create their own vocabulary learning lists and share them with others (Wu, 2015). learn the target language's content by matching characters, idioms, phrases, or sentences with definitions or translations (Nicholes, 2016).
Khan Academy	KA is a Nonprofit Organization (NPO), an open educational resource providing free, anywhere/ anytime online learning content in simple English in different subjects.
Grammarly	Grammarly detects and corrects prepositional errors, irregular verb conjugations, and inappropriate use of nouns and corrects misused words.

2.5.4 Types of Digital Assessment Tools in Classroom

Developing 21st-century skills in education is essential. Game-based learning can support innovative teaching in various settings (Mdlalose et al., 2022). Stuart et al. (2009) emphasize that assessments in teacher education should track student learning and progress. Assessment is an ongoing gathering of student performance data (Bansal, 2020).

Identifying, collecting, and evaluating student performance information allows for appropriate student assistance and leads to the development and adjustment of teaching and learning (Tosuncuoglu, 2018). Formative assessment can occur at many stages of a program. Formative assessment is defined as an assessment for learning primarily used to tell students about their learning progress and how to improve their learning experience (Stuart et al., 2009). Furthermore, formative assessment can be done utilizing a variety of technological platforms, including game-based learning platforms.

Table 2. 6 *Types of Digital Assessment Tools*

Online tools	Descriptions (Usage/Activity)
Kahoot	This interactive game-based learning platform creates multiple-choice quizzes, surveys, poll questions, jumbles and discussions through which students can engage and challenge one another with the top scorer or overall winner displayed on a scoreboard at the end of the game session (Ismail & Mohammad, 2017).
Mentimeter	Best for conducting live quizzes
Quizlet	Quizlet Application contains flashcards that could motivate the students to learn vocabulary (Ashcroft & Imrie, 2014).
Quizizz	Quizizz is a competitive game and the students give answers to the questions prepared by the teachers Degirmenci, R. (2021)

Edpuzzle	This application's activity can be set by adding multiple-choice questions on the Edpuzzle video. Best for listening and speaking.
Moodle	Assessment is also carried out using the course elements: Task, Forum, Wiki.
Nearpod	Best for gamified assessments
Socrative	Socrative for pure assessment purposes, and others sought to highlight the effectiveness of this electronic tool in enhancing cooperative learning and students' in-class engagement (Saeed & Meccawy, 2020).

Students are generally more enthusiastic about participating in the teaching and learning process when they hear the word "game." They believe that games are enjoyable activities that might keep them from being bored while learning. Knowing that studying for an extended amount of time causes boredom in pupils, teachers might use games as an excellent chance. Similarly, a study found that using games to teach language decreased students' anxiety while increasing their learning desire (Hung, 2018). The teacher may use those platforms above to enhance language teaching.

2.6 Digital Literacy in English Language Teaching Context

Since the basis of digital literacy is NLS, the concept of teaching digital literacy in English language teaching should be based on a sociocultural perspective, emphasizing the aspects of social context and practices. In this case, teaching digital literacy is not just about acquiring technical skills or understanding how to use digital tools. Instead, it involves recognizing that digital tools are deeply influenced by the social contexts, cultural norms, and practices of the communities in which they are embedded (Tour, 2019). In this case, using the situated learning approach (Barton et al., 2000; Gee, 2004) can be a relevant approach to teaching digital literacy within the context of English Language teaching.

The situated learning approach views the process of learning by context. This approach was initially proposed by Lave and Wenger (1991) through their work Situated Learning: Legitimate Peripheral Participation. The situated learning approach basically puts the learning activities into the same context as they are in

the real world or “simply to apply knowledge to their own context” (Pederson, 2012, p.123). Hafner, 2014. p.657 said situated learning is “embedded in real or simulated social contexts” in which students construct their knowledge. Through situated learning, learners are more engaged as they experience authentic materials/activities. Students learn language not in the abstract but in the application, in a context language is really for. An example of situated learning that aligns with digital technologies in the context of English language teaching is fan fiction (Black, 2005, 2009). Fan fiction is an online community that allows its members to “produce, read, write, and review user-created literary fiction inspired by existing works” (Rainey & Storm, 2017, p. 206). For example, authentic interaction and Social Interaction in digital platforms like Wattpad allow students to publish their fan fiction and receive feedback from a global audience. This interaction with other fans (readers) and writers encourages collaborative learning and critical thinking. From this viewpoint, teachers and learners can practice English and operate digital technology when interacting in the community.

Table 2. 7 *An example of digital literacy practice by Tour (2019)*

Reading a Wikipedia page	Communicating via email	Creating a webpage
Navigating a Google map	Commenting on a blog post	Making a Youtube video
Reading HTML code	Text messaging	Making a meme
Evaluating news	Sharing on Instagram	Modifying software
Searching for information on Google	Developing networks on LinkedIn	Creating a profile on Facebook
Managing personal data on Facebook	Participating in a discussion on Twitter	Collaborating on a Google document

Furthermore, it is essential to integrate digital literacy into language instruction effectively. Thus, it can be done through Student-centered pedagogical approaches, such as project-based, problem-based, or topical approaches, which work well for integrating digital literacy into English language instruction (K. Harris, 2020). For example, the students were assigned to write an email to a university overseas asking for information about what they wanted to know (e.g.

scholarship, course). This was a group project where each group should write an email using their leader's name and email. Before sending the email, the group should discuss the plan and search for the targeted overseas universities via laptops connected to the internet in the classroom. Google was their favorite search engine, and they will find more information about how to find such contacts or links to the international office website of a selected university. The students will read, discuss, and compare the information they got online. Through these activities, the students will improve their skills in using technology and teach other skills like critical thinking (Harris, 2020). Teachers and students can use these digital resources to practice digital literacy skills while studying English.

Additionally, the teachers can use various digital resources and applications in their lesson plans, including social media, online gaming websites, e-books, audiobooks, e-learning, and websites for ESL or EFL students. Here, e-books are intended mainly for consumers of electronic media or e-book devices, such as laptops or mobile phones, that offer affordability and accessibility and the opportunity to read at anytime and anywhere. An electronic book serves as a valuable resource for educators and learners alike. Furthermore, a Smartboard is an interactive whiteboard that functions as a large touchscreen by displaying graphics from a computer monitor (Preston & Mowbray, 2008). Additionally, different images, media and sound folders, animation games, and web-based resources contained in the lesson plan can all be accessed using smart boards. Teachers and students can use these digital resources to experience technology in the classroom while studying English.

In conclusion, teaching digital literacy in today's English language teaching is essential. This aims to prepare students to work with digital tools and apply their language skills digitally (Harris, 2020). Additionally, integrating technology into English language instruction can assist students in improving their communication skills, which include speaking, listening, reading, and writing both in conventional media and in the contemporary ICT context (Lee, 2002). Since communication with a broader network outside of the classroom is crucial for learning English, it can also encourage community habits that are more cooperative and socially inclusive

(Fitzpatrick & Davies, 2003). Students can quickly learn English with digital technology by watching conversational speakers on YouTube, reading English comic books or novels, listening to podcasts, and communicating with native speakers on social media. The same benefit applies to teachers. Technology allows learning to occur anywhere and provides greater flexibility for educators and learners to select the teaching strategies and learning styles that best suit their needs (Jung, 2014). With digital practice, they can broaden their knowledge of English language teaching approaches and stay current on the most recent digital trends.

2.7. Challenge of Technology Integration in ELT

The integration of technology relies on teachers' understanding and dedication. What they learn may positively or negatively challenge their beliefs and teaching methods (Olson, 2000, p. 1). There are many rationales for using technology in education. Technology has gained attention for improving student achievement, motivation, and productivity (Roblyer & Doering, 2010). In addition to benefiting students, teachers can also improve their technological abilities and expertise in the field (Cennamo et al., 2010; Minor et al., 2013; Xu & Pershing, 2010).

Redmann and Kotrlik (2004) define technology integration as ‘employing the Internet, computers, CD-ROMs, interactive media, satellites, teleconferencing, and other technological means in instruction to support, enhance, inspire and create learning’. However, in technology integration, teachers may find barriers. Ertmer's (1999) theoretical framework identifies two main types of barriers to technology integration. These barriers are broadly categorized as extrinsic (first-order) and intrinsic (second-order). The framework highlights that teachers can face obstacles from both categories, which may impact their ability to integrate technology into their teaching practices effectively. First-order barriers refer to external factors, such as institutional and school-related issues, typically beyond teachers' control (Ertmer, 1999). First-order barriers include factors such as access to technological resources, availability of time, and opportunities for professional development (Inan & Lowther, 2010; Pittman & Gaines, 2015). In contrast, second-order barriers refer to internal factors within the teacher, such as their self-efficacy in using

technology and their beliefs about the value of technology in enhancing learning (Ertmer, 1999; Ertmer et al., 2012; Vongkulluksn et al., 2018).

Barriers to integrating technology have changed over time, with new first-order and second-order barriers being recognized. These barriers can be grouped into key categories relevant to this study, such as access to technology tools and resources, training and technical support, administrative support, time for planning and implementing technology use, teachers' beliefs about the importance of technology, and their confidence in using these tools effectively (Hew & Brush, 2007; Inan & Lowther, 2010; Kopcha, 2012; Reinhart et al., 2011; Ritzhaupt et al., 2012). Each of these categories will be discussed further in the following sections.

2.7.1 Access

To integrate technology into teaching and learning, teachers must first have adequate access to digital tools and resources (Inan & Lowther, 2010; Ritzhaupt et al., 2012). This means having enough devices for both teachers and students without software or internet restrictions (Hew & Brush, 2007). Access is considered a primary barrier to technology integration, but schools have gradually improved availability, reducing its impact (Ertmer & Ottenbreit-Leftwich, 2010; Ertmer et al., 2012). However, studies suggest that access remains challenging, especially in smaller school districts (Carver, 2016; Howley et al., 2011; Kale & Goh, 2014; Makki et al., 2018). While access is necessary, it does not guarantee effective technology use in teaching, as educators may continue traditional methods despite having digital tools (Cuban, 2009).

2.7.2 Training and Technical Support

Training and technical support include helping teachers learn to use technology tools and resources effectively for teaching, as well as offering assistance with setting up and maintaining hardware and software (Hew & Brush, 2007; Inan & Lowther, 2010). Without proper training and support, it can be challenging to use educational technologies in the classroom (Hew & Brush, 2007; Kopcha, 2012). However, even with limited access to technology, proper training and support can still assist with its integration

(Makki et al., 2018). Motivated teachers may also find informal ways to learn about technology if formal training is not available at their school or district (Jones & Dexter, 2018). In a study of high school teachers, Gurfidan and Koc (2016) found that support services had the most significant impact on technology integration among factors like school culture and leadership. Similarly, Hsu (2016) discovered that, in a study of 152 elementary teachers, the main barrier to technology integration was a lack of training and exposure, besides students' lack of computer skills.

2.7.3 Administrative support

Even if teachers have access to technology and know how to use it, school leadership and culture can still hinder its use in classrooms (Ertmer & Ottenbreit-Leftwich, 2010; Tondeur et al., 2017). Administrators play a key role in supporting technology integration by setting a clear vision and providing professional development (Christensen et al., 2018; Machado & Chung, 2015; Thannimalai & Raman, 2018). Their leadership influences how teachers adopt technology in teaching (Schrum et al., 2011). Training for school leaders also affects how well teachers integrate technology (Dawson & Rakes, 2003). Additionally, administrators' attitudes toward technology and teaching methods impact how teachers use digital tools (Chang, 2012; Peled et al., 2011; Thannimalai & Raman, 2018)

2.7.4 Time Constraint

Even when teachers have access to technology and receive administrative support, they still need sufficient time to design meaningful technology-based lessons (Hew & Brush, 2007). One of the most frequently cited barriers to integrating technology into education is the lack of time to effectively plan and implement new learning experiences (Hew & Brush, 2007; Kopcha, 2012). Teachers need dedicated time to explore digital tools, test their functionality, and determine the best ways to enhance teaching and learning. Without this, meaningful technology integration is unlikely to occur. Additionally, time constraints caused by curriculum requirements and standardized testing often force teachers to adopt teacher-centered

approaches rather than student-centered ones. The pressure to meet benchmarks and cover required content limits their ability to implement more interactive and in-depth learning experiences using technology (Tondeur et al., 2017; Wachira & Keengwe, 2010). As a result, even when technology is available, the lack of time remains a critical challenge in transforming classroom instruction through digital tools.

2.7.5 Teacher Beliefs

Finally, when teachers have sufficient access to technology, adequate time for planning, proper training, and strong administrative support, their personal beliefs can still influence how they integrate technology into their teaching practices (Ertmer & Ottenbreit-Leftwich, 2010; Hew & Brush, 2007; Hsu, 2016). These beliefs can act as a barrier if they do not align with effective technology use in the classroom. Teacher beliefs related to technology integration fall into two categories: value beliefs and ability beliefs (Vongkulluksn et al., 2018). Value beliefs refer to teachers' perceptions of whether technology can help achieve meaningful instructional goals, while ability beliefs relate to their confidence in using digital tools effectively (Ertmer et al., 2012; Ottenbreit-Leftwich et al., 2018; Vongkulluksn et al., 2018). Teachers who strongly believe in the benefits of technology and feel capable of using it are more likely to incorporate it effectively into their teaching (Holden & Rada, 2011; Ottenbreit-Leftwich et al., 2010; Vongkulluksn et al., 2018).

In recent years, research has increasingly focused on these belief-related challenges, as external barriers such as access, time, and administrative support have become less significant over time (Ertmer et al., 2012). Addressing teachers' beliefs is essential to ensuring that technology is used to enhance student learning rather than simply as an additional tool with minimal impact. The study by Vongkulluksn et al. (2018) compared teachers' value and ability beliefs about technology use and found that teachers who believe technology supports key instructional goals (value beliefs) are more likely to integrate it effectively than those who are simply

confident in using it (ability beliefs). Other research also suggests that technology integration is more common among teachers with student-centered and constructivist learning views (Ertmer et al., 2012; Inan et al., 2010; Tondeur et al., 2017). Additionally, Tondeur et al. (2017) highlight a two-way relationship between teacher beliefs and technology use, where ongoing technology integration can gradually strengthen teachers' positive perceptions of its role in education.

2.8 Types of Teachers by Level of Experience

Teaching is a profession that involves growth and learning at every stage. As teachers gain experience, their roles, skills, and challenges change. Understanding the types of teachers based on their experience helps provide the proper support and training to meet their needs. This approach ensures that teachers can continue to grow and improve throughout their careers. Lian (2004), cited in Thong et al. (2024), categorizes teachers into three groups: novice, proficient, and expert.

2.8.1 Novice English Teacher

Novice teachers, sometimes called newly qualified teachers (NQTs), are usually defined as teachers who have completed their teacher-education program (including the practicum) and have just commenced teaching in an educational institution (Farrel, 2009). A novice teacher is a teacher who is assigned for the first time to carry out the learning/guidance and counseling process in an education unit organized by the Government, local government, or community (Permendiknas No 27 tahun 2020). Berliner (1988) suggests that novices typically achieve competency after three to four years of experience, with most teachers reaching proficiency by their fifth year and only a few advancing to become experts. It is supported by Lian (2004), stating that Novice teachers are defined as those with fewer than five years of teaching experience and junior titles.

There are three characteristics of Novice teachers as described as novice and according to the specific development criteria outlined by Lian (2004) and adapts to the specific research context as follows. First,

regarding years of experience, novice teachers typically have teaching experience ranging from zero to three years and may still be developing their teaching styles and classroom management skills and Novice teachers require guidance and mentorship to help them develop their teaching skills and handle classroom challenges. Second, concerning professional recognition, novice teachers typically hold junior titles or are in the early stages of their teaching careers. Third, regarding educational background, novice teachers only hold a bachelor's degree or diploma in a related field, whereas expert teachers must possess at least a bachelor's degree or higher.

In this context of study, the term "novice teacher" is specifically used to refer to the teacher who has already completed their bachelor's and has been actively engaged in teaching within an educational institution for less than five years.

2.8.2 Proficient Teacher

As described by Berliner (1988), teachers who fall between novice teachers and experts are often referred to as proficient teachers. These teachers have gained experience and developed their teaching skills beyond the initial stages but have not yet reached the level of expertise. Proficient teachers have a deeper understanding of classroom management, lesson planning, and student needs compared to novice teachers. They can adapt their teaching strategies to different situations and students, and they have a greater sense of confidence in their ability to handle diverse classroom challenges. However, while they are more skilled than novice teachers, proficient teachers may still rely on established routines and sometimes lack the flexibility or innovation seen in expert teachers. This stage is a crucial period of growth where teachers continue refining their skills, building on their experiences, and moving closer to the level of expert educators.

2.8.3 Expert Teacher

Expert teachers typically have at least 15 years of experience in the classroom, during which they have developed a deep understanding of both the subject matter and the art of teaching (Lian, 2004). With their extensive

experience, they have refined their instructional strategies and classroom management techniques to a level of mastery. These teachers often hold senior titles, such as lead teacher, department head, or mentor, reflecting their high level of expertise and leadership within the educational setting.

Palmer et al. (2005) identify four factors that separate proficient teachers from expert teachers: years of experience, social recognition, membership in professional or social groups, and performance. Sternberg (1974) explains that expert teachers have deep knowledge of their subject and three main traits: teaching skill, efficiency, and creativity. Expert teachers are good at noticing classroom behavior, giving helpful language tips, using different teaching methods, and quickly understanding information. They also love teaching and find creative ways to help students learn, which is something novice teachers often lack.

2.9. Bilingual School Context

Bilingual education is seen as quality education delivered in two languages (Brisk, 2005). It uses students' native language and English to teach various subjects (Martin & Loomis, 2014). In Indonesia, students' native language is Indonesian, and it is combined with English before they move to full English classes. According to Mackey (1968), bilinguals are people who know and use more than one language for different purposes. Traditionally, bilingualism was defined as full fluency in two languages (Bloomfield, 1933). However, Grosjean (1989. p. 6) redefined bilinguals as individuals who develop competencies in two or more languages "to the extent required by his or her needs and those of the environment". Today, even limited knowledge of a second language can qualify someone as bilingual.

Bilinguals have a special ability to switch between languages depending on the context and the person they are communicating with. When speaking to monolinguals, they tend to partially deactivate their other language to focus on the shared language. However, when interacting with fellow bilinguals, they often use both languages by alternating or mixing them, a process called codeswitching. This natural phenomenon is not a sign of weak language skills but rather a way to adapt

and enrich communication. According to Genishi (1981), bilingual children use the code switching as a means of improving their ability to convey ideas effectively in different situations.

According to Būdvytytė-Gudienė and Toleikienė (2008), there are three main types of bilingual education. The first type is "immersion," which focuses on teaching students a second official or regional language in their country. This can be seen in countries like Canada, Belgium, Ireland, Luxembourg, and Switzerland, where students learn both the primary language and another official or regional language. The second type, known as "submersion," is designed for migrants or linguistic minorities to help migrants or language minorities learn the primary language and culture of their new country. The third type is for linguistic majorities who learn a foreign language as part of their education. Since English is considered a foreign language in Indonesia, bilingual schools are categorized under the third type of bilingual education. This approach aims to help students develop proficiency in English while maintaining their native language, Indonesian.

Bilingual schools apply different language policies based on their type of bilingual education. According to Johnson (2013), language policies influence a language's structure, use, function, and learning. These policies are key in shaping a school's curriculum, goals, culture, and teaching practices. One type, called two-way bilingual education, is reflected in its curriculum, aiming to promote national identity through Bahasa Indonesia while addressing the need for internationalization with English. As Cummins and Corson (1997) explain, this type supports the development of both minority and majority languages. In two-way bilingual classes, students use both their native language and a second language in specific proportions to ensure balanced language development.

2.10 Previous Study

Some previous studies focusing on the issue of digital literacy within the context of English language learning in Thailand supported this study. The first comes from Weerakanto (2019) to explore how educators and students employ digital technologies for academic and non-academic pursuits and understand their viewpoints regarding incorporating technology into educational programs, focusing

on enhancing their digital literacy skills. The research utilized mixed research methods, including the TPACK-DLT frameworks, to examine survey responses and observe classroom practices. The findings suggest a lack of clear comprehension regarding digital literacies among teachers. Consequently, they expressed a lack of confidence in integrating digital technologies into their teaching despite acknowledging the theoretical potential of these technologies in motivating students.

The second is a study conducted by Ata and Yildirim (2019). This study examines pre-service teachers' digital literacy perceptions and describes the quantitative characteristics of digital literacy among first and second-year teachers at a public university in Turkey. Specifically, the research focuses on understanding the perceptions of digital literacy among pre-service teachers and examining their patterns of knowledge and utilization of digital literacy. The qualitative data was then analyzed using content analysis. The results showed that the model exhibited strong alignment with the data, and the standardized regression weights revealed that attitudinal, technical, cognitive, and social factors emerged as significant predictors of digital literacy. This study highlights that pre-service teachers generally have high and positive perceptions of digital literacy. However, analysis of responses to open-ended questions revealed a lack of more nuanced cognitive skills required for tasks such as finding, evaluating, creating, and communicating in the digital domain.

Another study was conducted in Turkey regarding pre-service teachers' digital practices (Akayoglu et al., 2020). Using a qualitative approach, this study investigated the conceptualization of digital literacy by pre-service teachers in Turkey. The investigation included how the teachers defined this concept, the tools they used, and their purposes for choosing digital tools. The findings can be categorized into three main points: First, the conceptualization of digital literacy among PTs was multifaceted, ranging from basic knowledge to practical use and extending to critical, creative, and collaborative applications. Secondly, the study revealed the important role of university professors in shaping and advancing digital literacy among PTs. Thirdly, PTs' extensive use of social media platforms for

various purposes was observed. Meanwhile, there are two specific purposes, namely, linguistics purposes and pedagogical purposes.

A similar study by (Fadilah et al., 2022) on teachers' digital practice in Indonesia. This study attempted to gather insights from English teachers in Indonesia, focusing on their digital literacy, the incorporation of technology into their classrooms, and professional development efforts to improve their digital skills. Using a qualitative approach, the study involved the participation of 20 English teachers selected from various high schools in Sumedang. The qualitative methodology allowed for a comprehensive exploration of teachers' experiences and perspectives regarding digital literacy, technology integration, and professional development in English language teaching. The research findings revealed that all participating teachers had demonstrated competence in various activities, which aligned with TESOL standards for digital literacy. However, the study highlighted shortcomings in their teaching practices utilizing more advanced technological tools.

Nevertheless, there appeared to be a significant research gap as there have not been many systematic studies about the level of EFL teachers' digital literacy conducted by researchers, particularly in the Indonesian context at primary school and secondary high school, according to previous research. Most prior studies have focused only on analyzing the digital literacy levels and perceptions of teachers' digital literacy and using ICT in the teaching and learning process within the context of pre-service teachers and senior high schools. Based on the data from those earlier studies, this research intends to learn more about the level of digital literacy of Indonesian English teachers, as well as how they integrate technology into their teaching practices, what obstacles they encounter, and the strategies they use at the primary school level. This study focuses on EFL novice teachers who have been teaching for no more than five years.

2.11 Concluding Remarks

In summary, digital literacy belongs to the NLS, where literacy practice happens within a digital-rich environment. As included in NLS, digital literacy is not defined limitedly as the ability to operate technological tools or media but

beyond that. It includes accessing, analyzing, evaluating, sharing, creating, and modifying digital information. Likewise, in the digital age, teachers use many digital tools or media during teaching practices. So, digital tools and media for language teaching practices, such as e-books, PowerPoint, social media, LMS, ESL/EFL websites, and games, demand that teachers be digitally literate.

The terminology of digital literacy may lead to confusion since sometimes it overlaps with other related literacies such as information literacy, media literacy, e-literacy, and ICT literacy. However, the core concept of digital literacy is a type of literacy that deals with the wise management of digital information. Specifically, digital literacy represents the ability to find, evaluate, utilize, share, and create content using information technologies and the internet (Beckingham & Belshaw, 2011). It is supported by Hobbs (2010) that digital and media literacy refers to the ability to access, analyze and evaluate, create, reflect, and act. In this sense, digital literacy appears to combine related literacies into one skill set. Furthermore, this study employed a set of digital literacy competencies by Hobbs (2010) (access, analyze, evaluate, create, reflect, and act) as the basis of a theoretical study for describing English language teacher digital literacy practice. Meanwhile, the DigComp competencies framework is used to assess digital literacy levels. Then, the digital literacy level will be analyzed using rubrics of the level of digital literacy from Bayrakci (2020).

Next, the term 21st-century learning refers to the transformation of education that is being driven by technology. Teachers require digital literacy as a specialized ability to lead, facilitate, and assist their students in learning in a digital environment. Similarly, including digital literacy practice in language learning promotes the development of other 21st-century abilities while also preparing students for future occupations that require them to deal with digital tools and competitive talents.

In this context, both digital literacy and English language teaching are essential. However, the emphasis lies on digital literacy as the foundation for effective English language teaching in the digital age. Digital literacy enables EFL teachers to proficiently navigate digital tools and platforms, which enhances their

teaching practices and fosters better learning environments. As technology continues to shape the educational landscape, teachers must be equipped with the ability to find, evaluate, utilize, create, and share content, especially within the context of language teaching.